NOTE XVII.

NEW SPECIES OF EUROPEAN NEMERTEANS.

First Appendix to Note XLIV, Vol. I.

BY

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In the above-mentioned note, published six months ago, several new species of Nemerteans were described and at the same time an attempt was made to a classification of the group, which should be in accordance with the results arrived at through the comparative study of a more extensive number of species and genera than had been at the disposal of any of my predecessors.

I am indebted for this plentiful supply of working-material to the constant support of Prof. Ant. Dohrn and his assistants, and I feel especially obliged for their kindness in forwarding to me — either alive or in excellent state of preservation — further specimens for comparison or determination ever since my departure from Naples.

It is my intention to publish the descriptions of new or interesting Nemerteans, which may come to my notice, in the form of this first appendix, reserving the anatomical and histological results arrived at, for publication elsewhere.

The suborder of *Palaeonemertini*, which I established for the genera: *Carinella*, *Cephalotrix*, *Polia* and *Valen-*

cinia, embraces forms which are perhaps not so closely related to each other as are all the *Schizonemertini*, with which they were amalgamated in Max Schultze's subdivision of the *Enopla*, but on the other hand they are all of them as decidedly different from these as they are from the *Hoplonemertini*. Whereas *Cephalotrix* and *Carinella* must be looked upon as Nemerteans in which a more primitive stage of differentiation is retained (nervous system, proboscis, genital chambers), *Valencinia* and *Polia* represent types which have already become further developed and of these *Polia* seems to approach, by certain well-marked characteristics, to the *Hoplonemertini*. Of these characters I must mention one in particular: the curious, comb-like arrangement of the numerous small grooves in the epidermoidal tissues of the head, which together constitute the system of respiratory furrows. The ciliated respiratory duct, leading into the nervous tissue (vide: Zur Anatomie und Physiologie des Nervensystems der Nemertinen, by the author of this paper in: Verhandelingen van de Koninkl. Akademie van Wetenschappen, Vol. XX, Amsterdam 1880) does not communicate with the exterior by a simple circular opening — as it does in *Valencinia* — nor does it open at the bottom of a deep, longitudinal and richly ciliated furrow (as in the *Schizonemertini*), but it terminates exteriorly in a transverse groove, which encircles the head, with the exception of a small interruption in the median line of the dorsum. Numerous short grooves, all directed towards the anterior extremity of the animal, take their origin from this transverse furrow and are quite as strongly ciliated. The same arrangement occurs in the two highly differentiated genera of armed Nemerteans: *Amphiporus* and *Drepanophorus*, which in so many respects are however entirely different from *Polia* and all other *Palaeonemertini*. In *Polia curta* (young specimen) I counted about sixty, in *Polia minor* twenty-four of these secondary grooves. In no other genus of Palaeonemerteans I could as yet observe a similar arran-

gement, *Valencinia* having — as mentioned above — a simple, strongly ciliated opening to this duct, *Carinella* not being possessed either of a third posterior ganglionic lobe, nor of a duct leading into the nervous tissue, although exteriorly a simple transverse furrow in the epiderm may be detected and finally *Cephalotrix*, showing no trace at all either of external furrow, duct or posterior brain-lobe.

By these characters there appeared to be two principal modifications of structure among the genera belonging to the *Palaeonemertini*: on one side *Cephalotrix* and *Carinella*, on the other side *Valencinia* and *Polia*. The two latter genera were higher differentiated, and of these *Polia* showed certain unmistakeable affinities to the *Hoplonemertini*.

Curiously enough one of the species about to be described, unexpectedly bridges the interval existing between *Carinella* on the one hand and *Polia* on the other, at the same time proving the suborder of the *Palaeonemertini* to be a natural arrangement, which is in accordance with the real affinities of the species therein contained. The new species, for which I propose the name of:

Carinella inexpectata n. sp.

has more the external appearance of a *Polia* than of a true *Carinella*, the head not being by any neans widened out anteriorly into the more or less spade-like shape which it assumes both in *Carinella annulata* and *Carinella polymorpha*. Moreover a closer inspection reveals a lateral opening on both sides of the head, situated in the middle of a transverse groove which ventrally appears to coalesce with that of the other side, whereas dorsally it extends to close up to the median line. This transverse groove is provided with a set of small secondary grooves in the way described above for *Polia* and the *Hoplonemertini*. On the dorsal surface about six of these

secondary grooves are visible on each side, others being situated laterally in the vicinity of the external opening of the ciliated duct. On compression the brain was visible by transparency and appeared similarly shaped to that of *Carinella annulata*: a simple thickening of the lateral nerve-cords, ventrally united by a stout commissure. The dorsal commissure was not visible under these circumstances, nor was there any trace of a third (posterior) pair of lobes to the ganglion.

Microscopic sections clearly proved this apparent resemblance with *Carinella* to be confirmed by the internal organisation of the animal. As in that genus the lateral nerve-trunks are situated quite exteriorly to the muscular body-wall and so are the cerebral lobes. These latter are only the enlarged anterior portions of the lateral trunks. Histologically the nervous system closely agrees with that of *Carinella annulata*. An important difference however is situated in the ciliated canal, which commences at the above mentioned lateral opening and penetrates into the cerebral lobes, terminating in the midst of the nerve-cells. The presence of this canal, the physiological and morphological signification of which was fully discussed elsewhere [1]), gives an unexpected importance to this species, which henceforth must be regarded as intermediate between the more primitive (Carinella) and the more developed genera (Polia) of *Palaeonemertini*, the latter of which, by certain affinities distantly tend towards the highest differentiated forms of Nemerteans, the *Hoplonemertini*.

The colour of the specimen was red with a brownish hue. It measured $3^1/_2$ Cm. Under the microscope some faint transverse interruptions of the uniform pigment were visible, encircling the body.

Still it can never be confounded with young specimens of *Carmella annulata*, even on superficial inspection.

Habitat: Capri.

1) L. c. Verh. der Kon. Akademie, Amsterdam. 1880.

Another new species from the Bay of Naples belongs to the suborder of *Schizonemertini*. I may be allowed to dedicate it to the able manager of the Laboratory at Naples, to whose kind assistance I am indebted for so much valuable material.

Cerebratulus eisigii n. sp.

May be distinguished from all other species of the same genus by its proboscis, which is longitudinally striped. Generally the proboscis is white or of a very faint reddish hue, *Cerebratulus hepaticus* shows some broad and some thinner dark brown transverse bands near its implantation but a species with longitudinal stripes along the proboscis was not known as yet. Moreover the coloration differs from that of other species, the animal being of a wholly uniform dark olive green, even inclusive of the tip of the head. Only the inner surface of the respiratory clefts is white and so when these are closed a faint white bordering line betrays their position. Posteriorly the colour of the specimen examined was somewhat more mixed up with a reddish tinge.

The ground-colour of the proboscis is a light dirty green, the longitudinal stripes are dark brown and not quite straight but with very faint zigzag bends. Emanating from each angle of this zigzag line a very short transverse streak, vertical to the direction of the longitudinal stripes and about half as long as its own distance from the next transverse streak, was visible with the microscope.

The specimen was not entire and so its exact length could not be determined, nor whether a short caudal appendage was present.

Its width was about 4 mm. in a line with the mouth, the length of the mouth 3 mm., that of the respiratory slits $4^1/_2$ mm.

Urticating elements, of which the body measures about 15 μ, the thread up to 35 μ are present in the cellular coating of the proboscis.

The live specimen was sent over from Naples in February 1880.